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Electrooxidation of amino-substituted aryl chalcogenides

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Abstract

Electrochemical oxidation of amino- and dimethylamino-substituted aryl methyl chacogenides and diaryl dichalcogenides involves reversible electron transfer to form an unstable radical cation whose reduction current was registered by switching voltammetry. The unshared electron pair of nitrogen contributes much more into the highest occupied molecular orbital compared with those of sulfur and selenium, thus changing the nature of reaction centers participating in the electron transfer and subsequent reaction of the radical cations so that amino-substituted aryl chalcogenides no longer fit linear free-enegry relationships for aryl chalcogenide reaction series.